UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,614	06/30/2000	Brian L. Felsman	199.38514X00	9409

20457 7590 03/15/2004

ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-9889

EXAMINER	
KIANERSI, MITRA	
ART UNIT	**PAPER NUMBER**
2143	10

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/608,614	FELSMAN ET AL.	
	Examiner	Art Unit	
	mitra kianersi	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *38-74* is/are pending in the application.

4a) Of the above claim(s) *1-37* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *38-74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 June 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 4.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Specification

The examiner acknowledges an amendment to the specification and abstract filed on Dec/29/2003.

Response to Arguments

Applicant's arguments filed on Dec/29/2004 have been fully considered, but they are not persuasive.

Applicant in the newly added claim 38, 52 and 66, has added managing transmission by at least one transmitting network processor in the network. Regarding claim 38, on page 19, lines 18-29 and page 20, lines 1-14 a system for multicasting messages to a plurality of receiving network processors in a network, comprising:
a MDP database table comprising a plurality of parameters used to manage transmission by at least one transmitting network processor in the network and reception of multicast messages in the network by a plurality of the receiving network processors;
a MDP initialization module associated with the at least one transmitting network processor which reads a plurality of parameters from the MDP transmission database table to initialize a MDP transmission session by the at least one transmitting network processor utilizing the plurality of parameters;
a MDP initialization module associated with each of a plurality of receiving network processors which reads a plurality of parameters from the MDP database table to initialize a MDP receiving session by the plurality of receiving network processors utilizing the parameters;
a MDP operations module associated with the at least one transmitting network processor which receives requests to transmit messages, creates a NADP information packet for each message, and
transmits each message to each of the plurality of receiving network processors designated in the IVIDP information packet; and
a MDP operations module associated with each of the plurality of receiving network processors which receives messages transmitted by the IVIDP operations module associated with the at least one transmitting network processor, and transmits the messages which are received to a higher level software application.

Macker et al on page 627; Fig.2 depicts the general relationship of a sender (a network processor in the network) and receivers and summarizes the types of message generated by each. Macker et al. on page 627, paragraph 2, teach the use of the MDP application programming Interface (API) allows application to use and control protocol features.

Macker et al. Also on page 628 [5], teach client Nack process, where a client synchronizes with a server and encoding block beyond the last incompletely received block. Macker discloses on page 629, col 1, [1], the auto-parity feature of the server transmission sequence provides a percentage of parity repairing packets with the forward multicast data stream and on page 627, col 1, [2] discloses operation from higher level applications demonstrated with the protocol toolkit have included web content multicasting, imagery dissemination, directory replication, generic multicast file transfer and the integration into distributed situation awareness application.

Applicant on page 21, lines 25-33, argues that each of the independent claims recite in substance a MDP database comprising a plurality of parameters used to manage transmission by at least one transmitting processor in the network and reception of multicast messages in the network by receiving network processors, a MDP initialization module which reads the plurality of parameters from the MDP database table to initialize a MDP transmission session associated with the at least one transmitting network processor utilizing a plurality of parameters and a MDP initialization module associated with a plurality of receiving network processors which reads a plurality of parameters from the MDP database table to initialize a MDP receiving session by receiving network processors utilizing the read plurality of parameters. Macker et al. On page 629, col 1, [1-3], considers a file transfer application where MIME-type information and/or name identification for file content might be embedded in the info portion of an MDP transport object. Macker et al. On page 627, col 2, [1-3], and on Fig.2 depicts the general relationship of the sender and receiver and explains an MDP sender primarily generates messages of type MDP_DATA and MDP_PARITY to carry data content and related parity based repair information for the bulk data or file objects being transferred.

Applicant on page 22, lines 3-24 argues the server transmission on page 627, and the client reception and synchronization on page 628 as the MDP database, MDP initialization modules. However, there is no counterpart of this subject matter in Macker et al. While it is true that the server transmission is described as having the content of MDP object determined by several source based protocol parameters, this reference is to storage of the sender or server as illustrated in Fig. 2. There is nothing which corresponds to the MIDP database which is read by the at least one transmitting network processor and the plurality of receiving network processors to provide parameters for controlling transmission and reception by the claimed transmitting and receiving network processors. The description of the client reception and synchronization merely states that "[u]pon reception of ... messages from a new session source [the transmitting server], and MIDP client will 'synchronize' with the

source by beginning to maintain state on the source by using the object segmentation and encoding parameters". It is therefore seen that there is no reading from a database since what is involved is merely decoding of the received information. Moreover, the Macker et al disclosure does not even recognize the need for optimization by fine tuning based upon controlling parameters read from a database which are used by the transmitting and receiving network processors to control transmission of multicast transmissions, which is the benefit provided by the claimed MDP database table and associated MDP initialization modules, which read parameters for controlling the transmitting and receiving of MDP sessions by at least one transmitting network processor and receiving network processors.
Macker et al on page 627; Fig.2 depicts the general relationship of a sender (a network processor in the network) and receivers and summarizes the types of message generated by each. Macker et al. on page 627, paragraph 2, teach the use of the MDP application programming Interface (API) allows application to use and control protocol features.
Macker et al. on page 628 [5], teach client Nack process, where a client synchronizes with a server and encoding block beyond the last incompletely received block. Macker discloses on page 629, col 1, [1], the auto-parity feature of the server transmission sequence provides a percentage of parity repairing packets with the forward multicast data stream and on page 627, col 1, [2] discloses operation from higher level applications demonstrated with the protocol toolkit have included web content multicasting, imagery dissemination, directory replication, generic multicast file transfer and the integration into distributed situation awareness application.

Applicant on page 23, lines 1-5 argues that claim 66 further recites "when the at least one of the receiving processor which read the parameter was designated as an action entity within a field contained within the MDP information packet". Macker et al. on page 627, col 2, [1], disclose that participants Exchange User Datagram protocol (UDP) packets over an Internet Protocol (IP) network on a common IP "multicast" group address, but point-to-point unicast address transport sessions are also possible as is the use of optional unicast feedback.

Moreover, the arguments with respect to the allowableness of independent claims were found unpersuasive. The dependent claims 39-51, 53-65 and 67-74 are not allowable for the above-mentioned reasons.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 38-74 are rejected under 35 U.S.C. 102(b) as being anticipated by Macker et al. (IEEE. 7803-5538, 5/1999)

38. A system for multicasting messages to a plurality of receiving network processors in a network,

comprising:

a MDP database table comprising a plurality of parameters used to manage transmission by at least one transmitting network processor in the network and reception of multicast messages in the network by a plurality of the receiving network processors; (Fig.2, page 627, MDP group members and messages)

a MDP initialization module associated with the at least One transmitting network processor which reads a plurality of parameters from the MDP transmission database table to initialize a MDP transmission session by the at least one transmitting network processor utilizing the plurality, of parameters; (page 627, col 1, lines 23-25) and (page 628, lines 35-43, synchronization and encoding)

a MDP initialization module associated with each of a plurality of receiving network processors which reads a plurality of parameters from the MDP database table to initialize a MDP receiving session by the plurality of receiving network processors utilizing the parameters; (Initiation by the transmission of data by a source node, page 627, col 2, [4]) and (page 628, lines 35-43)

a MDP operations module associated with the at least one transmitting network processor which receives requests to transmit messages, creates a MDP information packet for each message, and transmits each message to each of the plurality of receiving network processors designated in the MDP information packet; (receive and aggregate multiple repair requests, page 628, col 2, [2-3]) and (page 629, col 1, lines 1-17)

a MDP operations module associated with each of the plurality of receiving

network processors which receives messages transmitted by the MDP operations module associated with the at least one transmitting network processor, and transmits the messages which are received to a higher level software application. (operation from upper layer application, page 627, col 1, [2]) and (encoding block beyond the last incompletely received block, page 628, col 1, [5])

39. The system recited in claim 38, wherein:
the MDP initialization module of the at least one transmitting processor ivates GRTT probing upon initial activation, wherein GRTT probing is a periodic sending of messages to the plurality of receiving network processors in the network and measures a time required to receive a response.(transmission periods and/or commands from a sender, page 627, col 2, [3]) and (page 628, col 1, [4], client reception and synchronization)

40. The system recited in claim 39, wherein
the plurality of parameters read by the MDP initialization module of the at least one transmitting processor comprise an initial GRTT value, a maximum GRTT value, a GRTT probe minimum interval value, and a GRTT probe maximum interval value. (MDP protocol attempts to maximize its use of parity segments it has calculated for repair transmission, page 628, col 2, [3])

41. The system recited in claim,40, wherein the MDP operations module
of the at least one transmitting network processor comprises:
means for generating a GRTT probe in order to measure a greatest round-trip time between the at least one transmitting network processor and updating the GRTT initial value stored in the MDP database table. (roundtrip time estimation, pg 627, col 2,[2]) and (pg 629, [4])

42. The system recited in claim 41, wherein:
the GRTT probe is periodically transmitted to each of the plurality of
receiving network processors starting at the GRTT probe minimum interval value and increasing an interval between transmissions of the GRTT probe until the interval equals the GRTT probe maximum interval value. (server Nack Aggregation and Repair, page 628, col 2, [2-3])

43. The system recited in claim 38, wherein:
the plurality of parameters read by, the MDP initialization module of the at least one transmitting network processor comprise an initial GRTT value, a recovery cycle, a compensation factor, a block size, and a segment size. (pg 628, col 1, [1-3])

44. The system recited in claim 38, wherein:
the MDP operations module of the at east one transmitting network processor computes a squelch time of the at least one transmitting network processor based on the recovery cycle, the initial GRTTvalue, the compensation factor, the block size, and a segment size. (pg 627, col 2, [2]) and (pg 628, col 1, [1-3])

45. The system recited in, wherein:
the MDP operations module of the at least one transmitting network processor de-queues a message when the squelch time expires. (pg 628, col 2, [1])

46. The system recited in claim,42, wherein the MDP operations module of the at least one transmitting network processor comprises:
means for computing a squelch time; and(pg 628, col 2, [3]) means for stopping GRTT probing and de-queuing a message when the squelch time expires. (pg 628, col 2, [1])

47. The system recited in wherein:
the MDP initialization module of the plurality of receiving network processors reads a stream integrity value and a nacking period value from the MDP database table. (pg 628, col 1, [5]) (pg 629, col 1, [1])

48. The System recited in claim 47, wherein:
The MDP operations module of the plurality of receiving network processors sends a negative acknowledgment only upon receipt of an MDP information packet when a field in the MDP information packet indicates that the receiving network processor on which the MDP client operations module executes is an info client. (pg 628, col 2, [4])

49. The system recited in claim 48, wherein:
the MDP operations module of the plurality of receiving network processors sends a negative acknowledgment when a Message is received with missing elements when the MDP information packet designates the receiving network processor on which

the MDP operations module executes is an action client. (pg 628, col 1, [2], and col 2, [5])

50. The system recited in claim 49, wherein:
the MDP operations module of the plurality of receiving network processors computes a message delay -time based upon a message size and a maximum transmission rate and waits for a period time equal to the message delay time upon receipt of an MDP information packet. (pg 628, col 2, [6])

51. The system recited in claim 50, wherein the MDP operations module of the plurality of receiving network processors further comprises:
means to compute a squelch time, (pg 628, col 2, [3])
means to terminate reception of a message when the squelch time has expired. (pg 628, col 2, [1])

52. A computer program, executable by a computer embodied on a computer readable medium for multicasting messages to a plurality of receiving network processors in a network, comprising:
a MDP database table comprising a plurality of parameters used to manage transmission by at least one transmitting network processor in the network and reception of multicast messages in the network by a plurality of the receiving network processors; (pg 628, col 1, [1]) and (Fig.2)
a MDP initialization module associated with the at least one transmitting network processor which reads a plurality of parameters from the MDP transmission database table to initialize a MDP transmission session by the at least one transmitting network processor utilizing the plurality of parameters;
a MDP initialization module associated with each of a plurality of receiving network processors which reads a plurality of parameters from the MDP database table to initialize a MDP receiving session by the plurality of receiving network processors utilizing the parameters; (pg 627, col 2, [4])
a MDP operations module associated with the at least one transmitting network processor which receives requests to transmit messages, creates a MDP information

packet for each message, and transmits each message to each of the plurality of receiving network processors designated in the MDP information packet; (pg 628, col 2, [2-3]) and

a MDP operations module associated with each of the plurality of receiving network processors which receives messages transmitted by the MDP operations module associated with the at least one transmitting network processor, and transmits the messages which are received to a higher level software application. (pg 628, col 1, [5]) and (pg 627, col 1, [2])

53 The computer program recited in claim 52, wherein:

the MDP initialization module of the at least one transmitting processor activates GRTT probing upon initial activation, wherein GRTT probing is a periodic sending of messages to the plurality of the receiving network processors in the network and measuring a time required to receive a response. (pg 627, col 2, [3]) and (pg 628, col 1, [4])

54 The computer program recited in claim 53, wherein:

the plurality of parameters read by the INADP initialization module of the at least one transmitting processor comprise an initial C')RTT value, a maximum GRTT value, a GRTT probe minimum interval value, and a GRTT probe maximum interval value. (pg 628, col 2, [3])

55. The computer program recited in claim 54, wherein:

the MDP operations module of the at least one transmitting processor comprises means for generating a GRTT probe in order to measure a greatest round-trip time between the at least one transmitting network processor and updating the GRTT initial value stored in the, MDP database table. (pg 627, col 2, [2]) a(pg 629, [4])

56 The computer program recited in claim 55, wherein:

The GRTT probe is periodically transmitted to each of the receiving network processors starting at the GRTT probe minimum Interval value and increasing an interval between transmissions of the GRTT probe until the interval equals the GRTT probe maximum interval value. (pg 628, col 2, [2-3])

57. The computer program recited in claim 52, wherein:
the plurality of parameters read by the MDP initialization module of the at least one transmitting processor comprise an initial GRTT value, a recovery cycle, a compensation factor, a block size, and a segment size. (pg 628, col 1, [1-3])

58. The computer program recited in claim 57, wherein:
the MDP operations module of the at least one transmitting processor computes a squelch time of the at least one transmitting network processor based on the recovery cycle, the initial GFRTT value, the compensation factor, the block size, and a segment size. (pg 627, col 2, [2]) and (pg 628, col 1, [1-3])

59. The computer program recited in claim 58, wherein:
the MDP operations module of the at least one transmitting processor de-queues a message when the squelch time expires. (pg 628, col 2, [1])

60. The computer program recited in claim 56, wherein:
the MDP operations module of the at least one transmitting processor comprises:
means for computing a squelch time and
means for stopping GRTT probing and de-queuing a message when the server squelch time expires. (pg 628, col 2, [1])

61. The computer program recited in claim 52, wherein:
the MDP initialization module of the plurality of receiving network processors reads a stream integrity value and a nacking mode value from the MDP database table. (pg 628, col 1, [5]) and (pg 629, col 1, [1])

62. Claim 62 recite the same limitations as claim 49. Therefore, it is analyzed and rejected by the same rationale.

63. Claim 63 recite the same limitations as claim 48. Therefore, it is analyzed and rejected by the same rationale.

64. Claim 64 recite the same limitations as claim 50. Therefore, it is analyzed and rejected by the same rationale.

65. Claim 65 recites the same limitations as claim 51. Therefore, it is analyzed and rejected by the same rationale.

66. Claim 66 recites the same limitations as claim 38. Therefore, it is analyzed and rejected by the same rationale.

67. The method recited in claim 64, wherein:

when transmitting the multicast message to the plurality of receiving network processors, a GRTT probe is also transmitted periodically to the plurality of receiving network processors which read the parameters in order to determine a greatest round trip time required for a message to be received by the plurality of receiving network processors which read the parameters and an acknowledgment to be sent back to the at least transmitting network processor. (page 628, col 2, [2-3])

68. The method recited in claim 41, wherein when the greatest round trip time is determined, the method further comprises:

adjusting the plurality of parameters stored in the MDP database based upon the greatest round-trip time. (page 627, col 2, [2]) and (page 629, [2-3])

69. The method recited in claim 67, comprising:

the at least one transmitting network processor calculates a squelch time based upon the parameters retrieved from the MDP database; and

the squelch time is set equal to the perish ability time by the at least one transmitting network processor when the squelch time exceeds the perish ability time. (page 628, col 2, [1-3])

70. The method recited in claim 66, comprising:

the at least one transmitting network processor monitors for negative acknowledgments, transmitted by the plurality of receiving network processors which read the parameters, to be received when the, squelch time has not been exceeded. (page 628, col 1, [2], and col 2, [5])

71. The method recited in claim 70, comprising:

retransmitting a portion of the multicast message when a negative acknowledgment is received from at least one receiving network processor when all data in the multicast message has not been received and a squelch time has not been exceeded. (page 628, col 1, [2], and col 2, [5])

72. The method recited in claim 70, comprising:
computing a squelch time based upon the plurality of parameters stored in the MDP database and transmitting a negative acknowledgment when a portion of the multicast message has not been received by at least one of the receiving network processors and the squelch time has not been exceeded. (page 628, col 1, [2], and col 2, [5])

73. The method recited in claim 72, wherein:
transmitting a negative acknowledgment when a portion of the multicast message has not been received by at least one of the receiving network processors occurring only when the at least one of the receiving network processors has been designated as an action receiving network entity in the MDP information packet. (page 628, col 2, [6])

74. Claim 37 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitra Kianersi whose telephone number is (703) 305-4650. The examiner can normally be reached on 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (703) 308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mitra Kianersi
03/03/2004

DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100